TABLE 4. PAD OPENING AND CLOSING DATES

TSA-1	Date Opened	Date Closed
Cell 1	11-01-70	05-18-71
Cell 2	05-19-71	12-17-71
Cell 3	12-15-71	06-05-72
Cell 4	06-05-72	01-15-73
Cell 5	12-22-72	06-20-73
Cell 6	05-24-73	11-07-73
Cell 7	11-07-73	01-23-75
Cell 8	04-24-74	10-25-75
TSA-2		
Cell 1	09-00-75	12-00-77
Cell 1A	07-00-80	07-00-80
Cell 2	12-00-77	06-09-80
Cell 3	08-00-80	still open
TDA Pad	09-26-72	11-17-78
TSA-3	08-01-85	still open

4. A railroad spur was completed in 1974 for transporting Rocky Flats waste directly to the TSA, thus eliminating the transfer to trucks at CFA.[14] A railcar transfer yard was added at the southeast corner of the TSA (Figure 14.a) to facilitate railcar transfer to and from the RWMC.

5. Early in 1975, segregation of combustible and noncombustible TRU waste began for storage in Cell 8.

6. In 1976, an assay system as procured for determining the Pu content in drums.

c. Weather-proofing--

1. During 1972, TSA containers were improved. Plywood boxes were covered with fiberglass, and the steel drums were lined with 0.25 mm polyethylene.[48]

2. In 1973, a protective polyvinyl sheet was installed as a winter cover over the stored waste on the TSA pad.[51]

3. In 1974, rust and bare metal on TRU drums were treated before storage.[51]

d. Security--

1. In 1974, an exclusion fence was installed to control access to the TSA pad.

2. In 1975, an intrusion-detection security alarm system as installed for the TSA.

e. Monitoring--

1. In 1973, temperature and humidity of the atmosphere surrounding the drums were first measured.[51]

2. When the exclusion fence was installed in 1974, special ballast with low alpha value was used for the railroad track bed inside the fence to ensure low background radiation for monitoring.

5.1.3 Transuranic Disposal Area (TDA)

The Transuranic Disposal Area (originally designated the Engineered Waste Storage Area) pad was constructed in September 1972, in an area not suited for pits or trenches because of near-surface basalt outcroppings.[33] This area was established to dispose of waste that was not transuranic but did contain less than 10 nCi/g of transuranic alpha emitters in a single container and had a dose rate of less than 200 mR/hr at the container surface.[14,27]

The initial pad was a 36.6 by 51.8-m asphalt pad surrounded by an earth berm sufficient to give a 0.9-m cover and 3:1 final slope.[52,53] A southern extension added in 1973 measured (36.6 by 50.3 m), and the direction of stacking waste was reoriented to be compatible with future extensions.[51] The pad was again expanded in 1976 in a western extension to give total overall dimensions of 73.2 m wide by 102.1 m long.

Boxes were stacked around the periphery, and drums were stacked horizontally in staggered layers. Waste on the pads was covered with earth so that no more than two rows of drums or one row of boxes was exposed at any time. The final cover was at least 0.9 m of earth, with a slope no greater than 3:1, and was seeded with sod-building grass.[14,27] This disposal method was used to permit year-round disposal operation as well as segregation of this type of waste material for future retrievability if desired.

The TDA was entirely covered in November 1978, and closed to further use. Closure was completed by covering the remaining exposed metal waste containers with plywood and covering the entire stack with polyethylene and soil in a manner similar to the TSA pads (Figure 11).

During the last quarter of FY 1979, a reentry was conducted into TDA in the area of the oldest waste containers to evaluate their future retrievability. Visual observation indicated that the 208.2-L drums (Figure 12) and wooden boxes were deteriorated sufficiently to preclude easy retrieval of any containers. Preliminary analyses of soil and air samples revealed minimal radioactive leakage from the waste containers. Soil moisture and temperature probes were installed in the excavated area before closure.[54]

DOE officially authorized closure of TDA on July 5, 1979. Additional transuranic-contaminated waste (less than 10 nCi/g) will be buried within the RWMC, but must be segregated in other clearly marked areas.[55,56]

A plan to stabilize the waste on the TDA was submitted to DOE-ID in January, 1985. Engineering design and modeling for the stabilization methodology recommended in the plan is scheduled for completion in FY-1985.

5.1.4 TSA-2

The second TSA pad, opened in September 1975,[10] is constructed like Pad 1 and has the same dimensions. An air-support weather shield (ASWS) erected over the southern portion of TSA-2 in October 1975, permitted all-weather operations (see Figure 13). The ASWS is equipped with (a) a backup blower system with its own auxiliary power plant to maintain the supporting internal pressure should the primary blower system fail, (b) a heating system to heat the air and prevent snow from accumulating on the shield, (c) an air-lock entry with double doors for vehicle access, (d) a separate doorway for personnel use, and (e) an emergency-exit doorway for personnel.[14]

In 1976, a drum monitor was procured to help preclude inadvertently creating a critical assembly caused by bringing together two or more overloaded drums containing plutonium in excess of the imposed limits.[27] Cell-monitoring instruments to measure temperature and humidity were added to this pad in 1977. Figure 14 is a photograph of storage on TSA-2 under the ASWS in 1981. Waste containers are stacked vertically 4.6 m high,

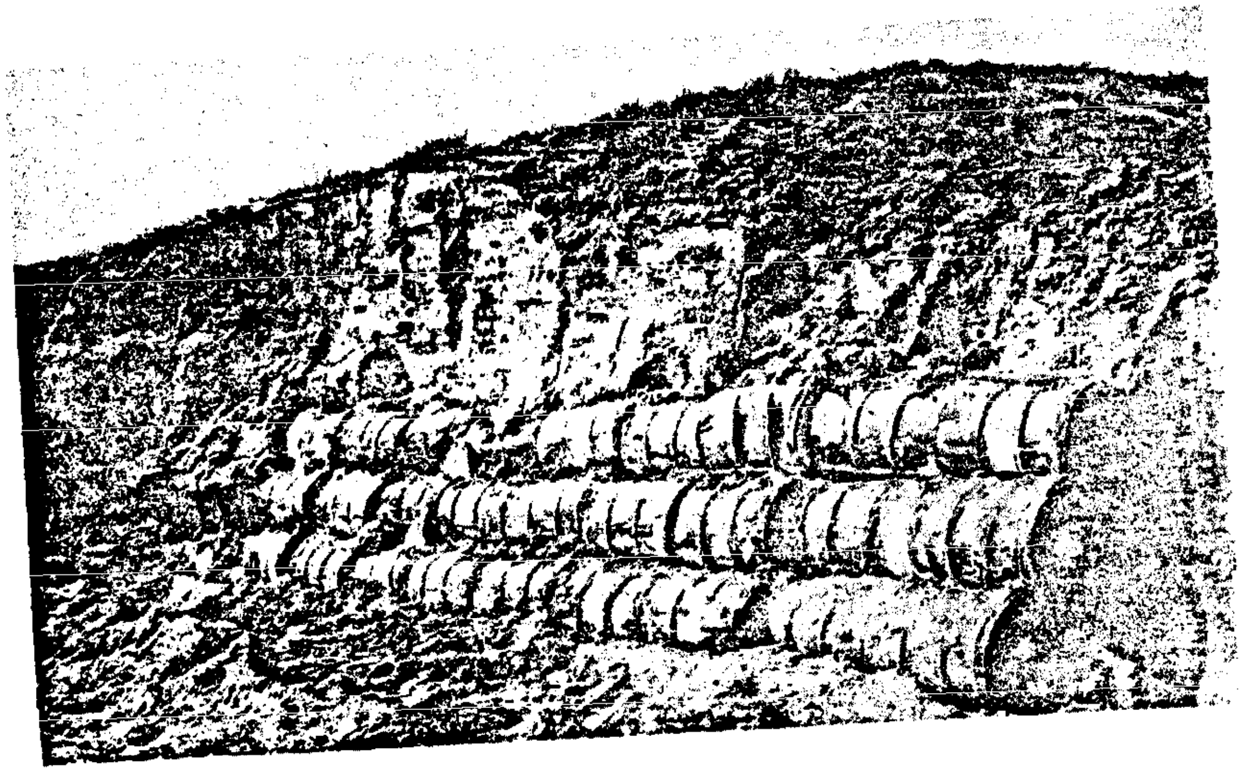


Figure 12. TDA penetration exposing 208.2-litre drums.

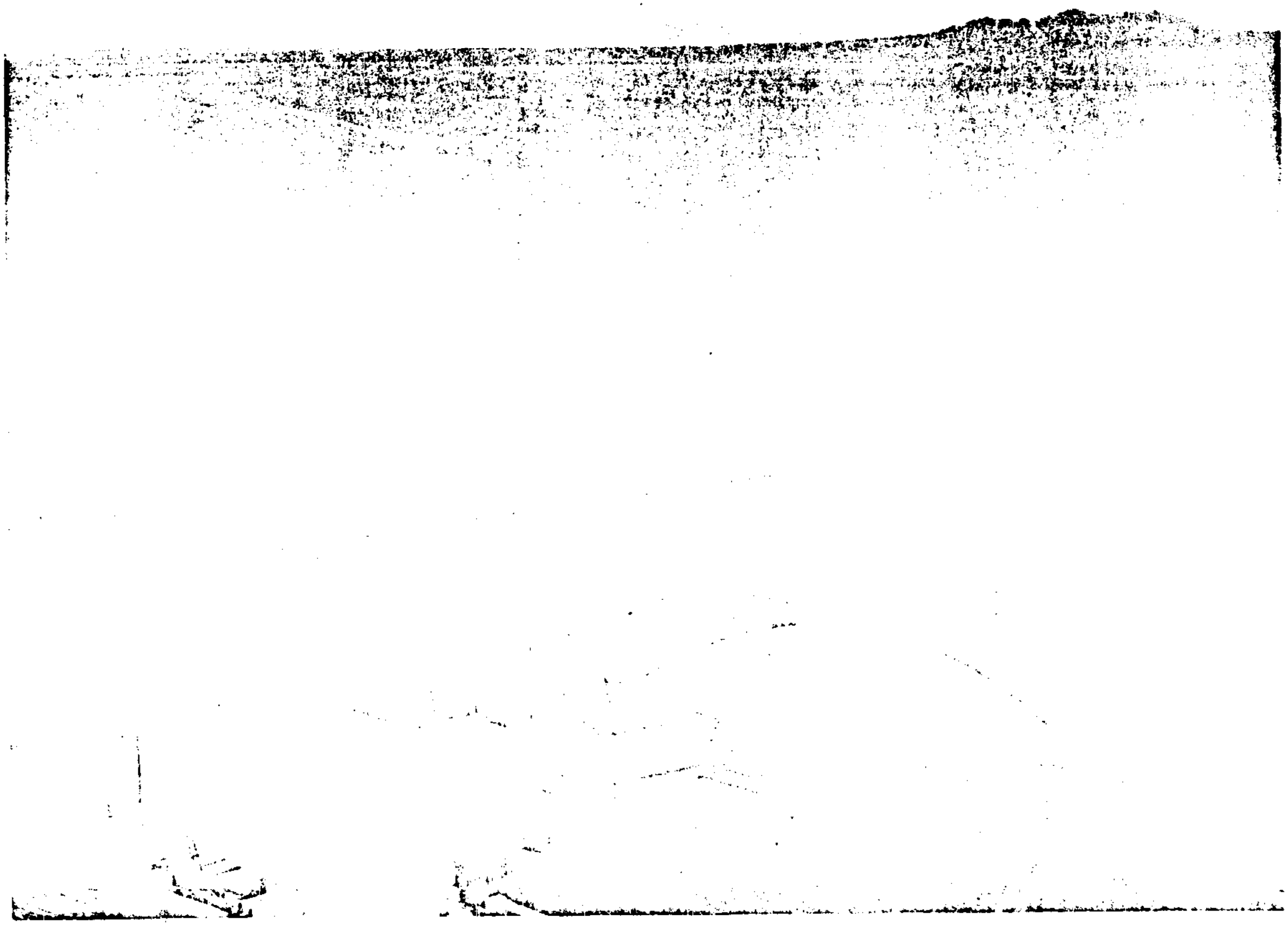


FIGURE 13. TSA-1, TSA-2 AND ASW^ ^WEPP, AND C&S ASWS

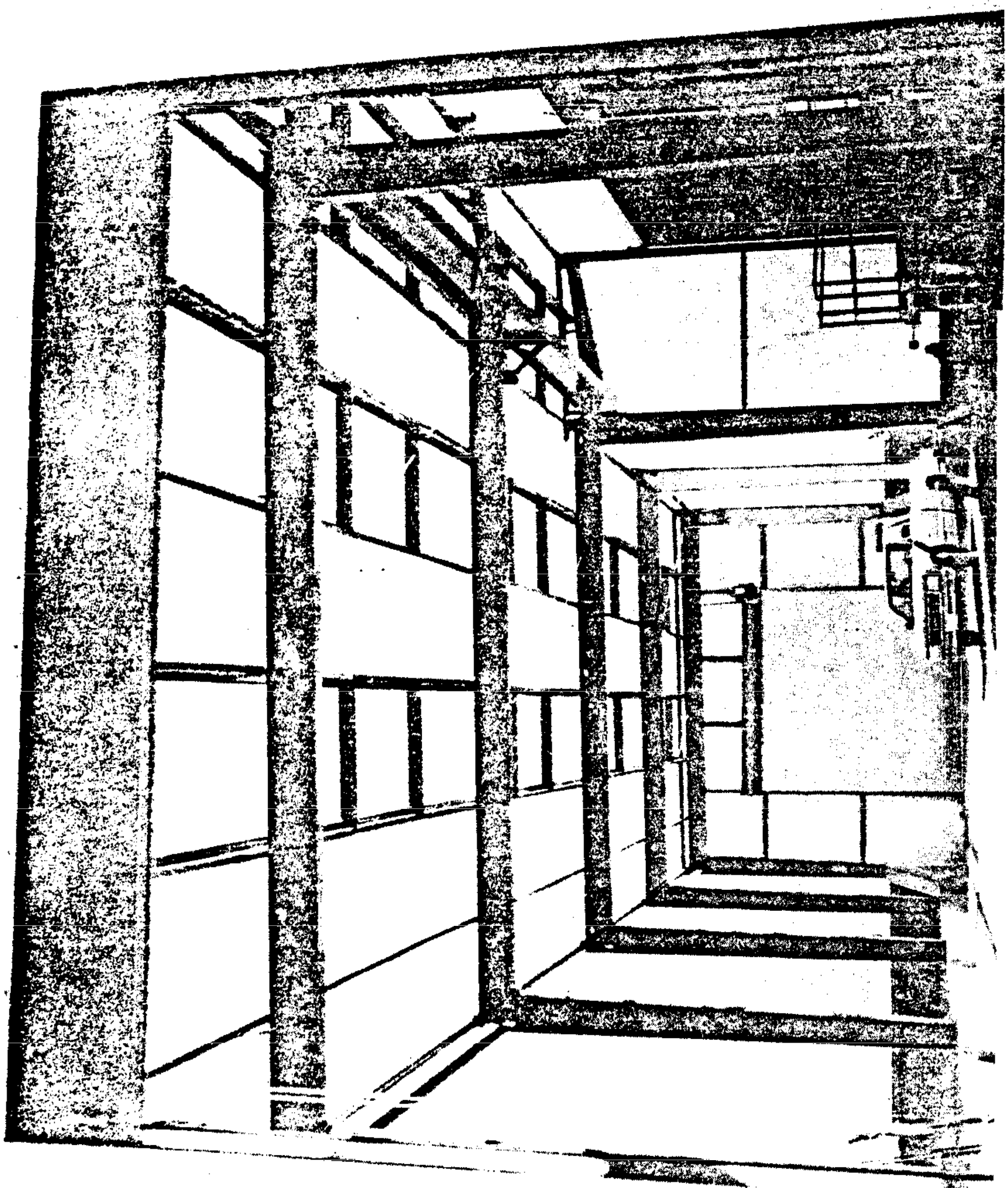


FIGURE 13a. C&S BUILDING EQUIPMENT AIRLOCK

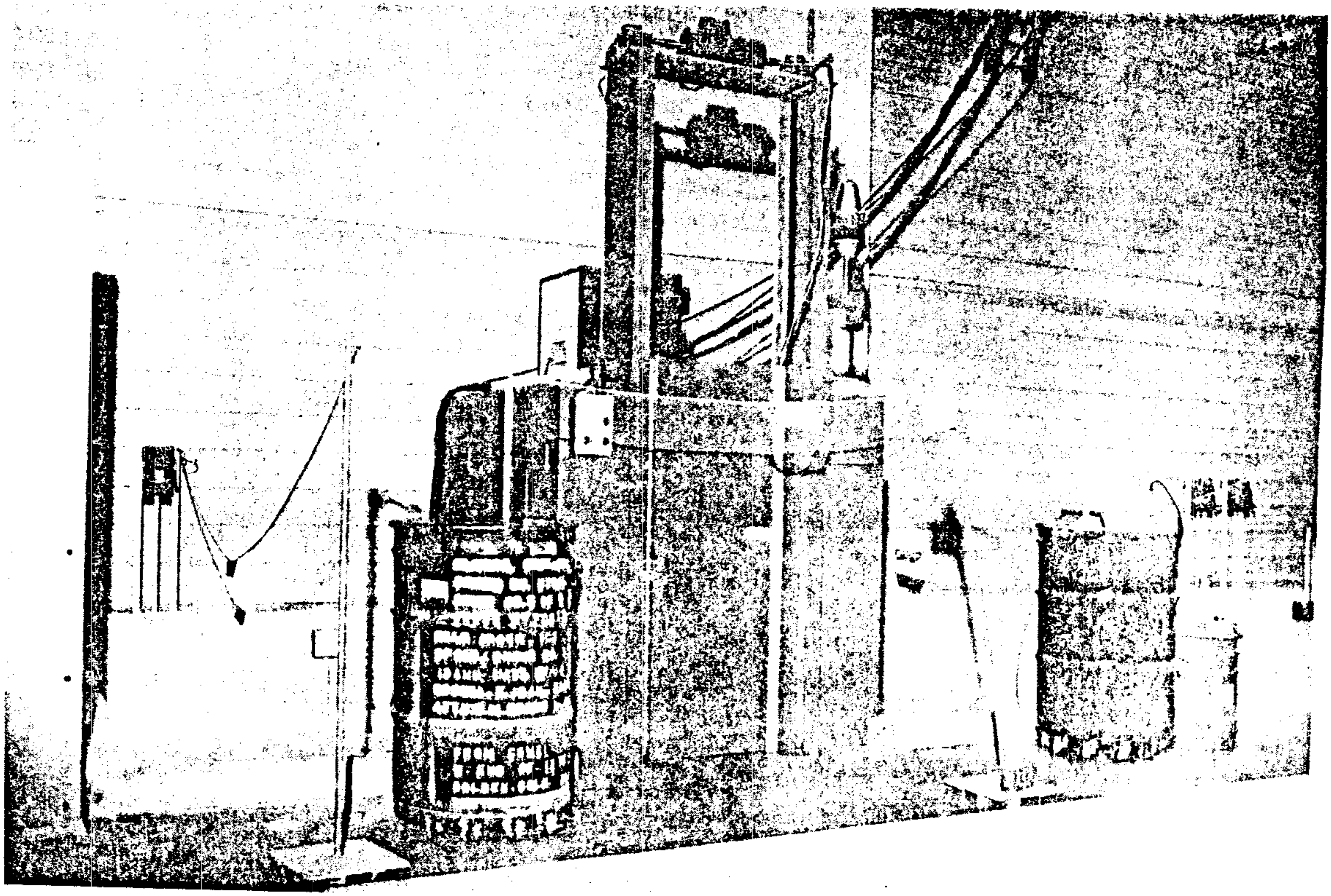


FIGURE 13b. CONTAINER ASSAY SYSTEM

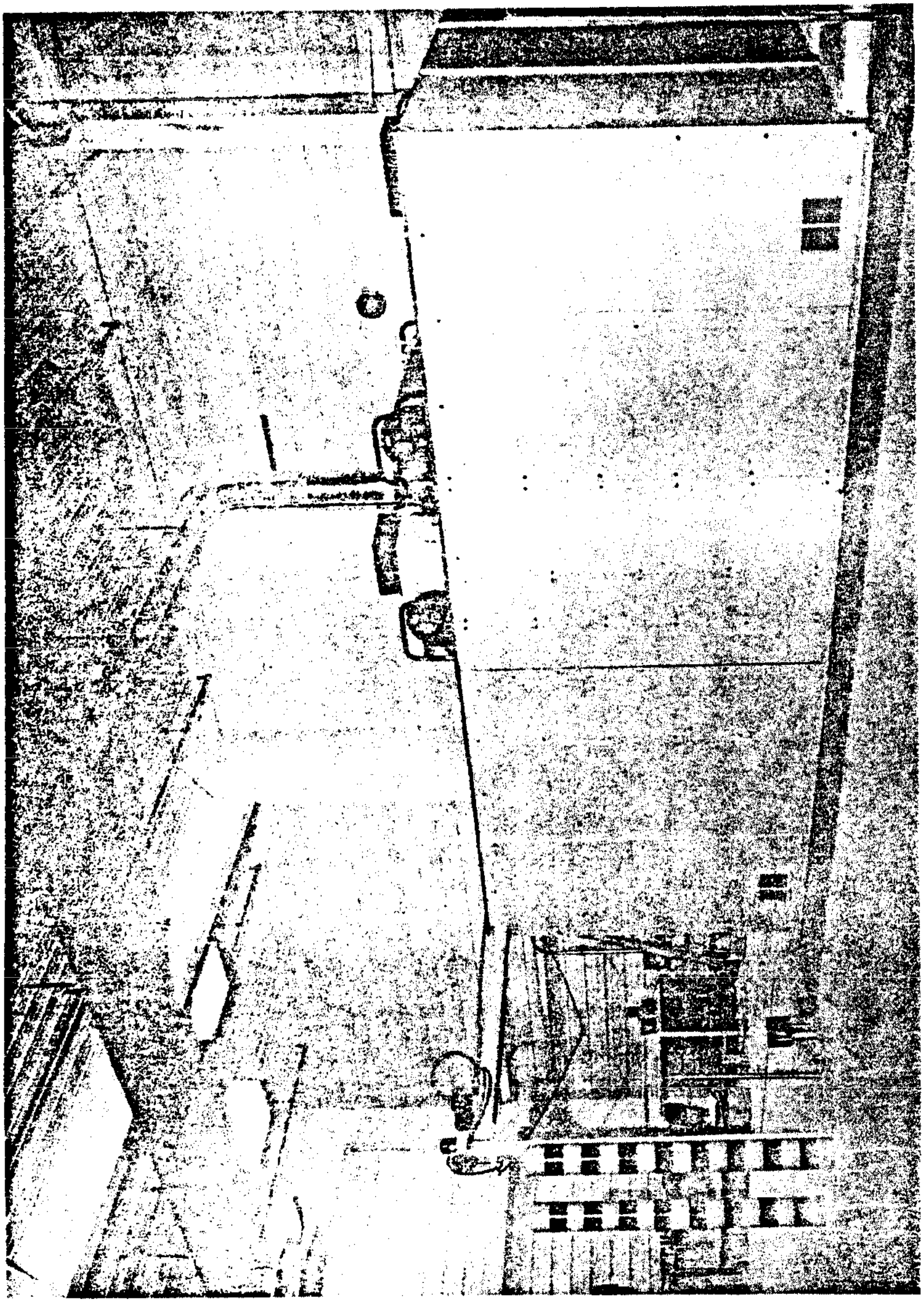


FIGURE 13c. REAL-TIME RADIOGRAPHY

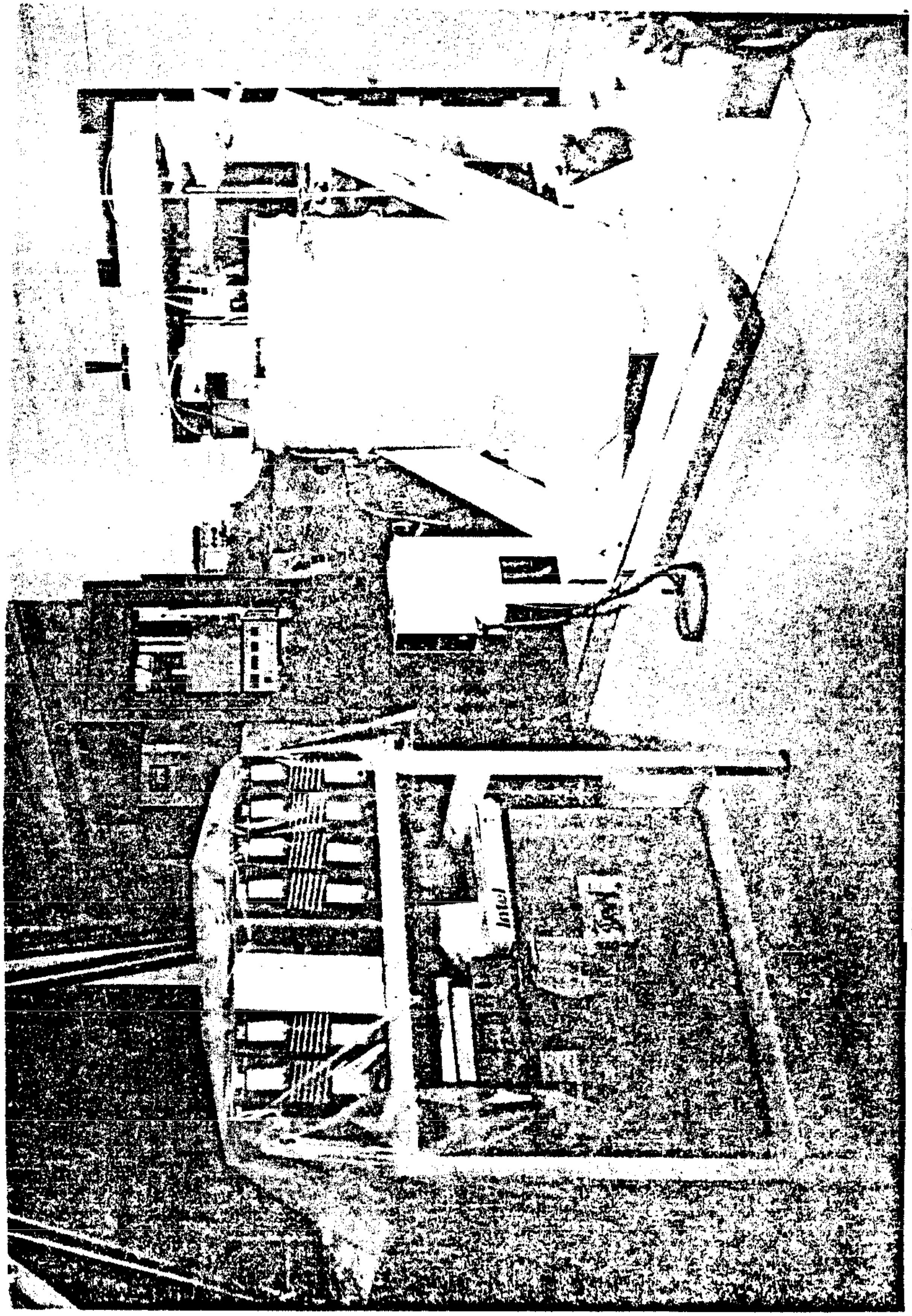


FIGURE 13d. CONTAINER INTEGRITY SYSTEM

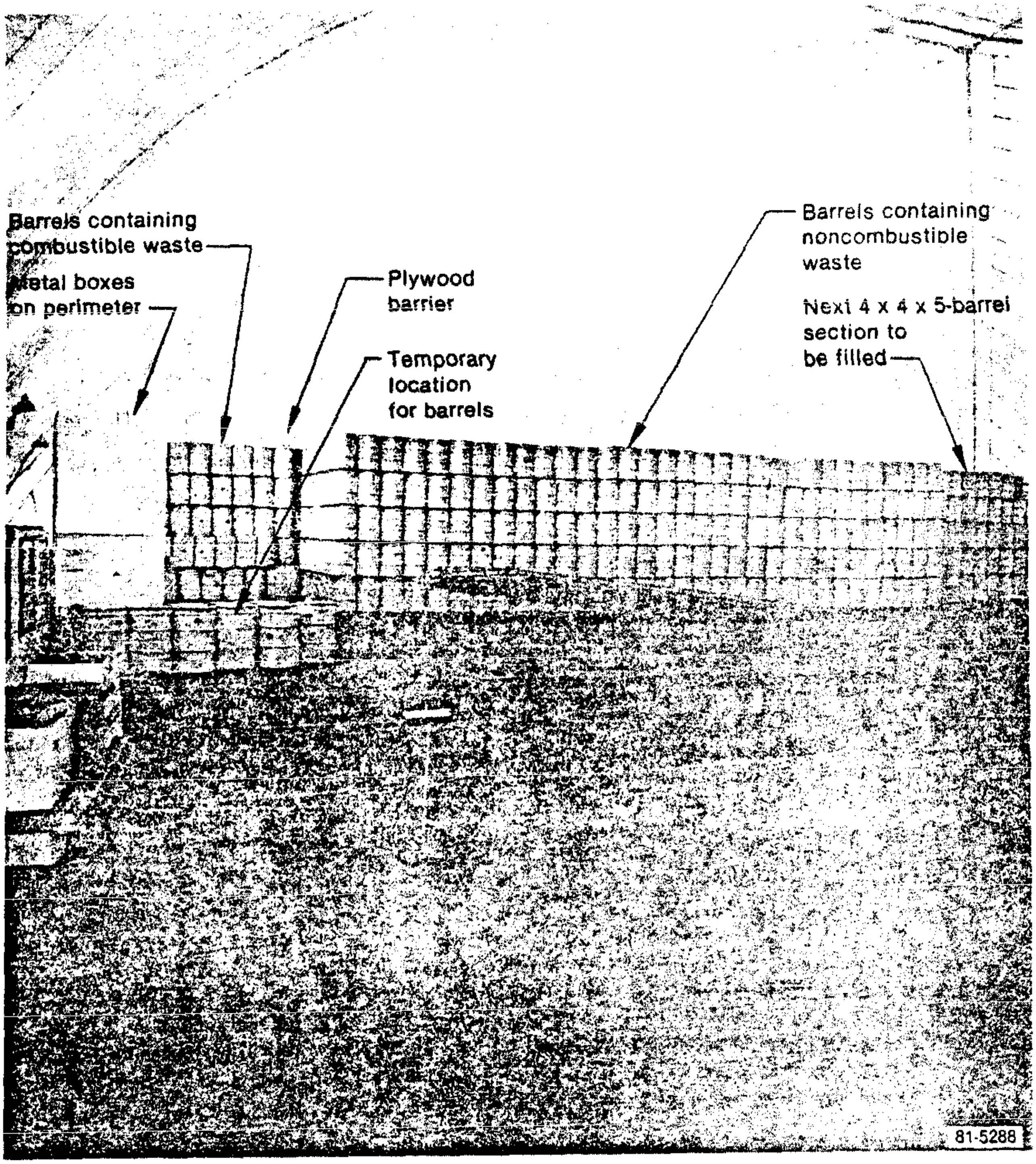


Figure 14. Waste stack in ASWS-2 on TSA Pad-2.

except that within 9 m of the edge they are stacked about 3.7 m high to allow sloping of the final soil cover to improve drainage. A 0.6 to 1.2-m earth firewall isolates each 45.7 by 30.5 m cell. Fiberglass-coated boxes are stacked to define the boundary and provide for side load-bearing surfaces; the other containers fill the cell spaces bounded by the boxes. A sheet of 0.6-cm-thick, fire-retardant plywood is placed between every layer of drums to stabilize the stacking surface and increase overall rigidity.

After each cell is filled, the ASWS is moved forward (north), and the containers are covered with a final covering which consists of: (a) a sheet of 1.5-cm-thick plywood, (b) a 0.05-cm nylon-reinforced polyvinyl plastic cover, and (c) 0.9 m of soil. Earth-moving equipment can be operated atop the soil cover on the stacked containers. The soil is then seeded to a sod-building grass.

It was determined that there was sufficient space in the present ASWS to accommodate, without moving the structure, the predicted number of TRU waste drums until SWEPP becomes operational. This accommodation could be achieved by increasing the drum stack height to six high and storing the M-III bins and RFP boxes on the TSAR. An evaluation substantiated that the drum stack height could be safely increased to six drums high. This change was initiated in late 1983 to avoid the costs of moving the ASWS and covering the waste.

5.1.5 SWEPP (TSA-3)

The Stored Waste Examination Pilot Plant (SWEPP) 47-m by 18-m metal examination building and the 198-m by 46-m Certification and Storage (C&S) Air Support Weather Shield (ASWS) were erected in FY-1984 on the 285-m by 45-m TSA-3 pad (completed in 1983, Figure 13).

SWEPP consists of two buildings (Figure 13): The SWEPP Building and the certified and segregated storage building (Figures 13 and 13a). The purpose of the SWEPP process is to determine whether the stored TRU waste meets the Waste Isolation Pilot Plant (WIPP) Waste Acceptance Criteria.

The equipment for nondestructive examination (Figure 13b, c, and d) is located in the SWEPP Building; this equipment includes real-time radiography (RTR) and the container integrity (CI) and assay systems.

The RTR, a movie image of the waste container contents, is provided via X-ray and T.V.

The CI system ascertains, through ultrasonic testing, the condition of the waste containers. The drums tested must meet Department of Transportation Type A specifications. If they do not, they are overpacked into new Type A containers.

The assay system is designed to measure fissile content, thermal power content, and total TRU content by using the differential die-away technique (i.e., active neutron interogation and passive neutron counting).

FY-1985 was devoted to installation and checkout of examination and facility equipment, initial operating staff acquisition and training, preparation of maintenance and operational documentation, and facility startup activities. SWEPP startup was initiated August 1, 1985.

5.1.6 TSA-R

TSA-Retrieved (TSA-R) is a 45.7 by 132.6-m asphalt pad built in December 1976, as a southerly extension of TSA-1. TSA-R provides 20-year retrievable storage of TRU waste retrieved during two projects conducted between 1974 and 1978. These two projects, Initial Drum Retrieval (IDR) and Early Waste Retrieval (EWR), are discussed later in this section.

Waste was repackaged in 314.2 L drums, DOT 7A steel bins, or metal cargo carriers. The pad was filled using DOT 7A steel bins stacked two high around the perimeter, with cargo carriers stacked two high in the middle.

from pits
11/12
because
post
1970
decision

The TSA-R pad was closed in FY 1979 following an ultrasonic test program conducted by the TRU Waste Systems Project on previously retrieved drums. The waste containers on the pad were covered with 10.2 cm by 30.5 cm by 4.9-m planks, 6-mm-thick plywood, polyethylene sheeting, and 0.6 m (2 ft) of soil. Temperature and moisture probes in the storage cell were placed by the WP Environmental Science Project before closure. Figure 15 shows the TSA-R pad being covered with earth.

The portion of the TSA-R pad that does not contain retrieved waste is at present used for temporarily storing waste in DOT 7A fiberglass-coated boxes from Rocky Flats and Mound Laboratory. The boxes were moved to TSA-2 (usually within a year) as needed for the perimeter walls of each cell and to fill space between cells.

5.1.7 Intermediate-Level Transuranic Storage Facility (ILTSF)

Construction of the Intermediate-Level Transuranic Storage Facility (ILTSF), an area designed to store intermediate-level TRU waste, began in late 1975. Waste is designated intermediate level if it emits beta-gamma radiation at levels high enough to require special handling and shielding[37,57]--specifically limited to between 200 mR/hr and 4500 R/hr at the container surface. At the close of FY 1982, the upper radiation limit was being revised to 100 R/h in the RWMC packaging criteria to agree with WIPP-DOE-069, Rev. 1, "TRU Waste Acceptance Criteria for the Waste Isolation Pilot Plant." The ILTSF provides below-grade storage in carbon-steel-pipe vaults for this intermediate-level TRU waste until shipment to a permanent federal repository is possible.[57]

Work associated with installing the initial storage vaults was completed in May 1976. The pad was extended to a length of 107.3 m in the fall of 1976.[57] Initially an experimental installation, the ILTSF is now an established operating facility.

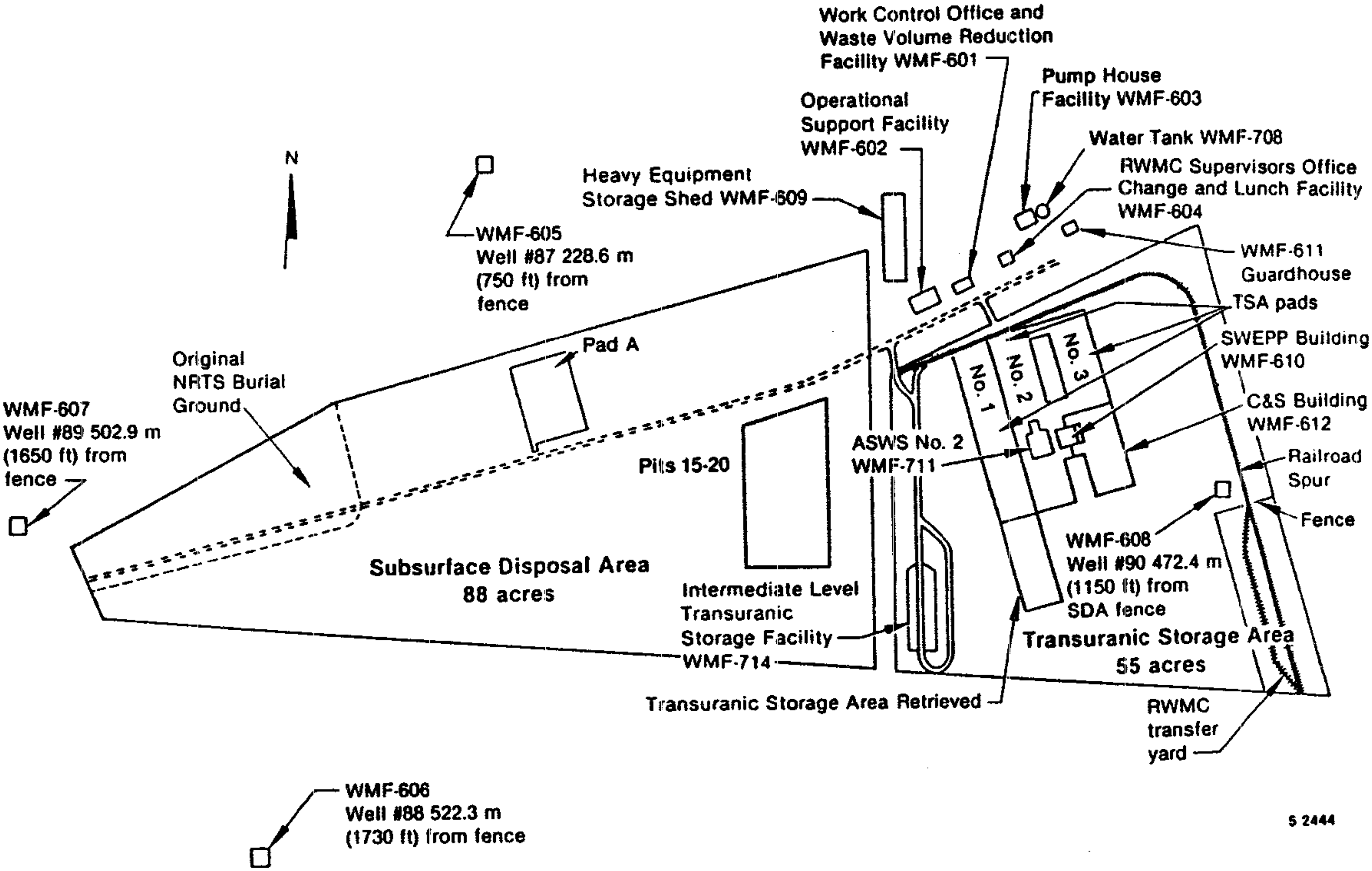


FIGURE 14a. TSA ACTIVE STORAGE AREAS

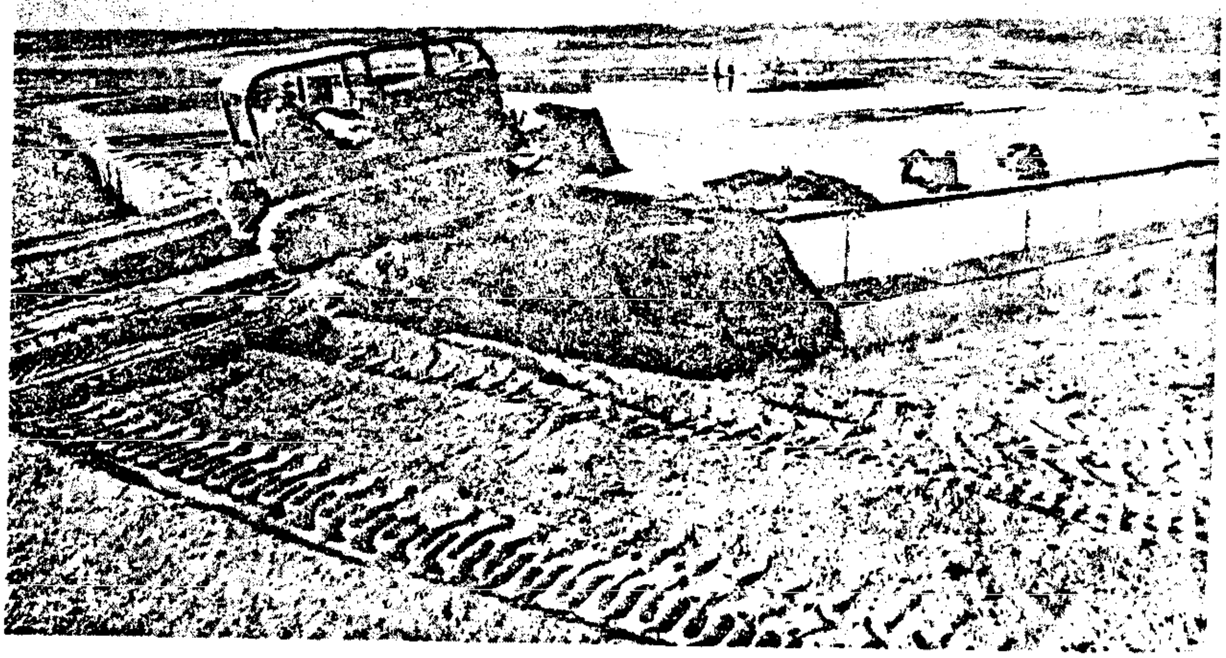


Figure 15. Covering of the TSA-R pad.

The original ILTSF contained 26 steel pipe vaults: twelve 61-cm-diameter vaults and fourteen 40.6-cm-diameter vaults.[56] Sixteen additional 61-cm-diameter vaults were installed in 1977, and fifteen more were installed in 1978. Also in 1978, all vaults were modified to improve the closure seal. Some of them were modified so that samples could be taken of inside air, moisture, and temperature. The vaults installed in 1978 were 9.1 m deep. This depth required drilling emplacement holes about 3.7 m into the basalt. In FY 1980, fifteen 61-cm and five 40.6-cm vaults were installed at the ILTSF--all of them about 4.6 m long. The length of all future vaults will be limited to 4.6 m due to the cost of drilling into the basalt. In FY 1981, five 40.6-cm-diameter and twenty-two, 61-cm-diameter ILTSF vaults with shield plugs and radiation-monitoring tubes were installed. Twenty-two, 61-cm and ten, 40.6-cm-diameter ILTSF vaults were installed. Twelve, 121.9-cm-diameter ILTSF vaults were designed and procured (for installation in FY 1983) for temporary storage of New Waste Calcining Facility (NWCF) filters. These twelve 121.9-cm diameter vaults plus twenty 61-cm-diameter and four 40.6-cm-diameter vaults were installed during FY-1984. A second 31.7 m by 106.7 m ILTSF pad was completed in July 1985.

A removable concrete plug in each vault provides shielding.[14,27] The vaults are embedded in a compacted embankment 9.1 m wide, 106.7 m long, and 1.5 m high. The vaults extend about 10 cm above a 5-cm-thick asphalt pad. The height of the pad provides adequate soil depth above the basalt for the vaults and prevents accumulation of water around the vaults. The asphalt surface allows use of heavy machinery during waste unloading and retrieval operations.[58] Free-air transfer is the method used for transferring waste into the 61-cm-diameter vaults (Figure 16), while a bottom-discharge cask is used for transferring waste to the 40.6-cm- diameter vaults.

5.2 Receipt of Offsite TRU and Low-Level Waste

Rocky Flats has been the main source of TRU waste shipped to the INEL. Since the termination of the Interim Burial Ground Program, no other offsite waste has been received without specific AEC authorization. Authorization, established through Letters of Agreement, has been given to

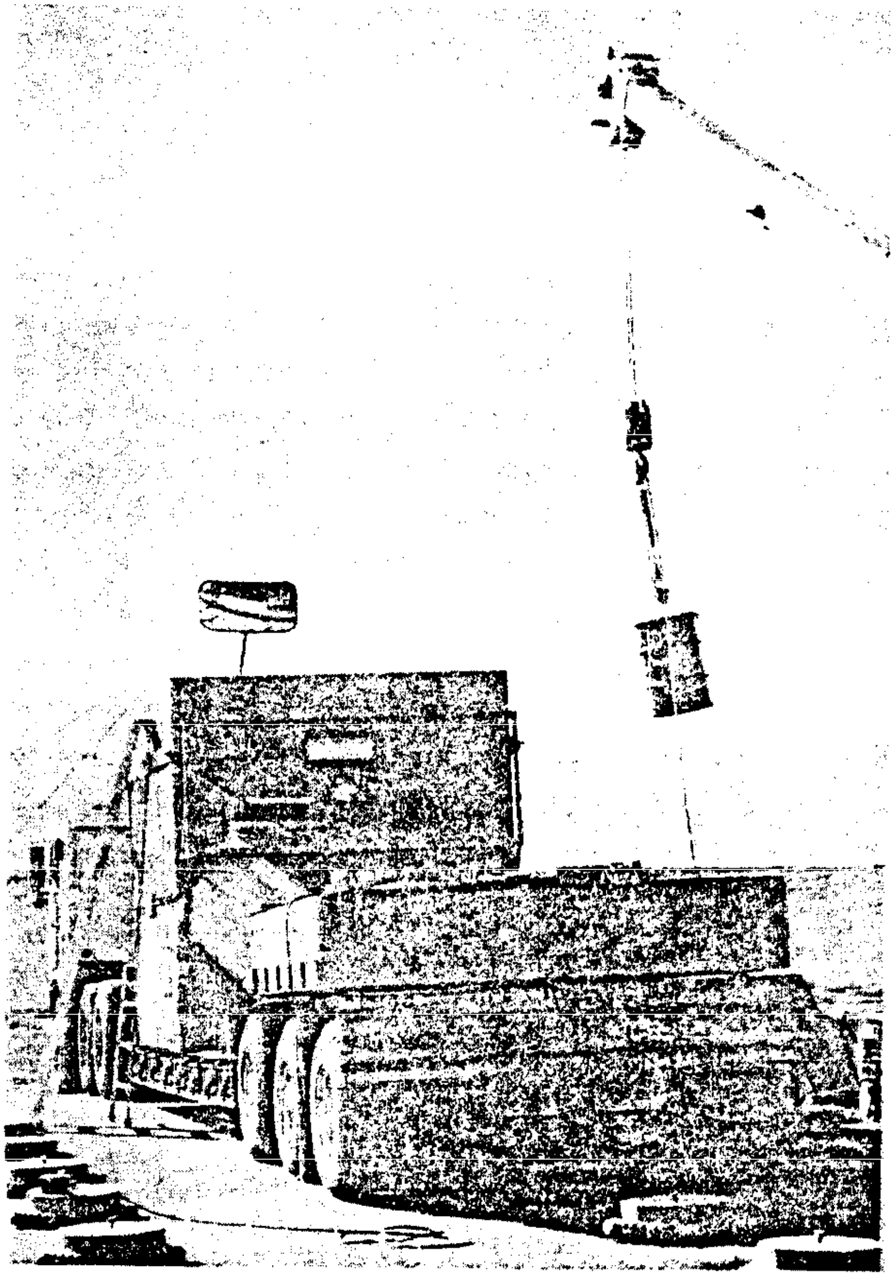


Figure 16. Free-air transfer to ILTSF vaults.

receive transuranic waste from Bettis Atomic Power Laboratory, Pittsburgh, PA, (since 1973); Argonne National Laboratory-East, Chicago, IL, (since 1974); Mound Laboratory at Miamisburg, OH, (since 1975); and Battelle Laboratories in Columbus, OH (since 1978). The Letters of Agreement establish receipt criteria for each shipper.[59,60,61,62] A similar Letter of Agreement was negotiated with Rocky Flats in 1975.[63] Before 1975, receipt criteria for Rocky Flats waste were not formally written; only since about 1970 has Rocky Flats supplied information on content and curie level of its waste along with each shipment. Before that time, Rocky Flats provided a year-end memorandum summarizing the radionuclide content and volume of waste that had been shipped to the INEL during that year. A special Letter of Agreement was negotiated in 1977 with Argonne-West for receipt of intermediate-level TRU waste.[64]

In October 1979, DOE announced a policy change to discontinue the use of commercial burial sites for disposal of low-level radioactive waste generated by DOE contractor operators and to dispose of that waste instead at DOE disposal sites. This policy was adopted to relieve pressure on the three commercial low-level waste disposal sites resulting from reduced capacity at those sites. After discussion with the State of Idaho,[65,66,67,68] disposal of low-level waste from ANL-E was begun in September 1980.

In 1978, formal packaging criteria for radioactive waste receipt were established, and these criteria have replaced the Letters of Agreement.[69] Packaging criteria for acceptance of low-level waste from DOE facilities other than the INEL were issued in FY 1980 to support the receipt of ANL-E low-level waste. These criteria are updated periodically[69, 69a and 69b]; the most recent update was March 1985.[115]

5.3 Retrieval of Waste

The first information on conditions of the waste came not from a formal study, but from an attempt to recover some experimental equipment in the fall of 1969. Although the equipment was not found, waste buried for 10 to

15 years was uncovered. Barrels were found undamaged and well preserved, but boxes and other similar packaging material had deteriorated.[4]

5.3.1 ACC Retrieval Study

In 1971, the AEC requested Allied Chemical Corporation (ACC) to perform a probe test of buried waste to determine (a) the condition of waste and containers, (b) soil migration of the Pu contaminants, (c) difficulties of controlled contamination spread during retrieval, and (d) cost of retrieval. Waste from Pits 2, 5, 10, and 11 was examined--some of it buried for more than 10 years. Some barrels were in excellent condition while others were corroded. It was obvious that damage during original dumping operations was extensive and had resulted in many open barrels. Plywood boxes and cardboard cartons were deteriorated to the extent that they had no containment value.[70]

5.3.2 Initial Drum Retrieval Project

The Initial Drum Retrieval (IDR) project was initiated in FY 1974 with the following objectives:

a. To demonstrate the safe retrieval of drums buried at the RWMC between 1968 and 1970

b. To gain experience in handling and repackaging these drums for interim storage

c. To develop and use the most economical storage container for retrieved waste. A total of 20,262 drums were repackaged and stored.

filled after 1970

Retrieval operations began in July 1974, and ~~were~~ completed in June 1978. The retrieval was limited to Pits 11 and 12 after probes into Pits 6, 9, and 10 uncovered high levels of contamination and badly deteriorated containers. Personnel wearing anticontamination clothing retrieved the waste under an air-support weather shield. During the 3-1/2 years of these operations, retrieval personnel experience no serious injury, and they received no significant increases in wholebody dose of radionuclides.[71]

Cargo carriers were selected and procured for storing IDR drums because they offered the advantages of a transportable overpack and were the most economical of the proposed storage containers.

Finds of the project were as follows:[71,72]

a. Of the drums retrieved during the entire project, 91.5% had good integrity.

b. Virtually all drums from Pit 11 showed visible rusting on the surface.

c. About 6.1% of the Pit 11 drums had external alpha contamination, which was easy to control and showed no tendency to spread to other areas.

d. None of the Pit 12 drums had external contamination, and they were in much better condition than those from Pit 11--probably due to a shorter time underground.

e. About 2.4% of the drums were breached (small holes); of these drums, one-third leaked free liquid, which was usually uncontaminated.

Conclusions in the final report[71] were that any retrieval operation could be performed in a manner similar to that used in the IDR project, provided the drums had been stacked in an orderly manner and had been buried in the ground for less than ten years. The boxes were deteriorated badly enough to require repackaging; they were not retrieved in this project.

5.3.3 Early Waste Retrieval Project[73,74,75]

The purpose of the Early Waste Retrieval (EWR) project initiated in FY 1976 was to develop methods and equipment for the safe retrieval of TRU waste that had been buried for 22 to 24 years. Safety considerations were to include evaluating personnel exposure risks and minimizing spread of contamination to the environment during retrieval of uncontained waste and waste in deteriorated containers.

Retrieval activities began May 4, 1976, and terminated September 29, 1978. Total waste retrieved from Pits 1 and 2 and Trenches 5, 7, 8, 9, and 10 amounted to 170.6 m^3. This included 457, 208.2-L drums, 34.43 m^3 of loose waste, 24.3 m^3 of contaminated soils, and 17.2 m^3 of waste generated by retrieval operations. About 67% of the drums retrieved were severely breached. Free liquid leaked from about 6% of the drums, and 5% had external alpha contamination.

All retrieval activities were performed inside the Operating Area Confinement (OAC), a self-supporting building constructed of lightweight metal panels. An air-support weather shield provided weather protection for the OAC. The OAC prevented the spread of contamination to the environment and provided operational safety for personnel. Figure 17 shows EWR operations inside the OAC within ASWS-3.

All personnel entering the OAC were required to wear anticontamination clothing and a bubble suit. An air compressor in the OAC supplied clean air to the bubble suits. EWR personnel were periodically rotated to other assignments within the RWMC. The average exposure reading for the entire RWMC crew was steadily reduced during the time of the EWR project--1500 mR in 1976, 990 mR in 1977, and 730 mR in 1978. The established operating and safety procedures and improvements in techniques and materials prevented spread of contamination and reduced the amount of contaminated soil and waste generated from retrieval operations.

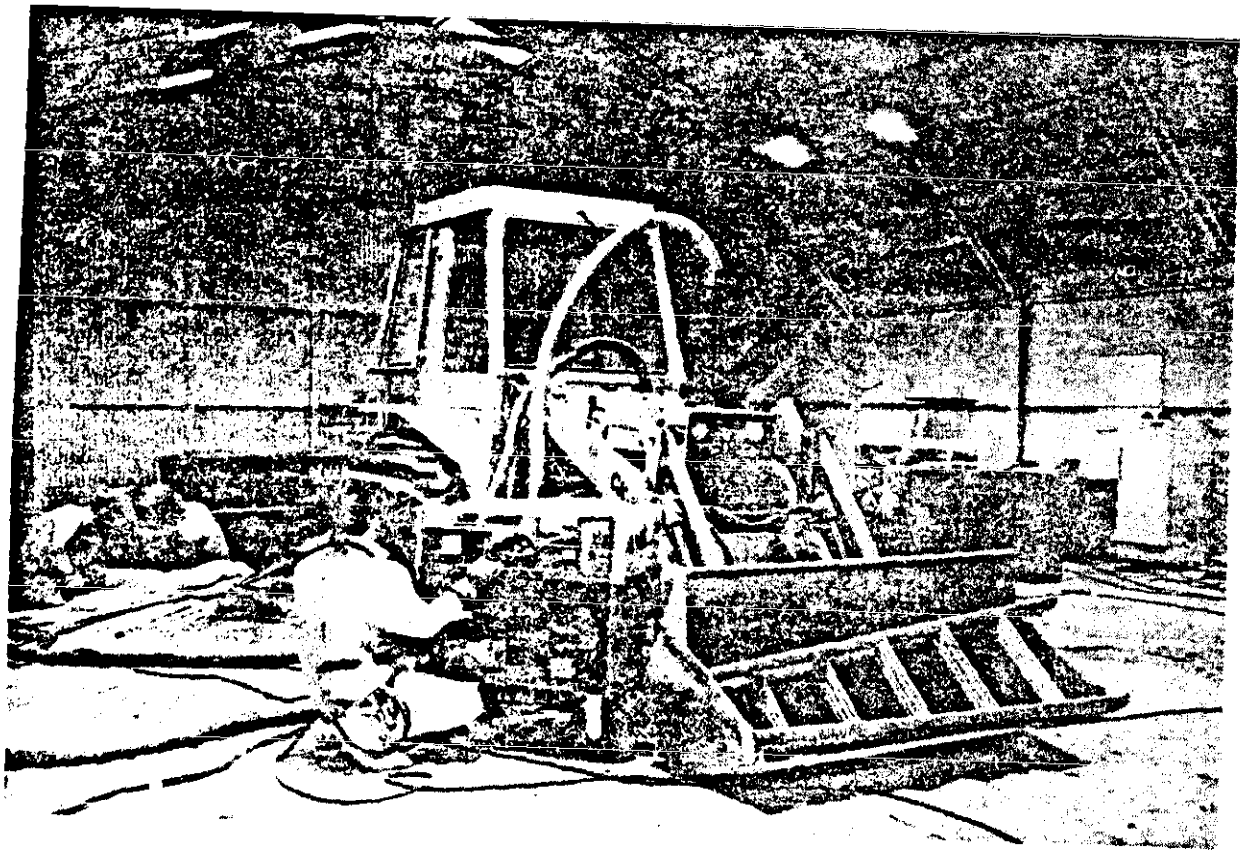


Figure 17. EWR operations inside OAC.

All waste was wrapped in plastic before repackaging. The loose waste, breached drums, and contaminated soil were placed in new drums. Waste generated during operations was repackaged in drums (also compacted in 1978). DOT 7A steel bins (MIII) were used as overpack containers for the repackaged waste.

On termination of retrieval operations, (a) all equipment was decontaminated and removed from the OAC, (b) the excavation was backfilled with clean soil, (c) the OAC was decontaminated, and (d) the facility was placed into a standby mode.

In June 1981, ASWS-3 was deflated and stored. The anchor blocks were covered in place when the area was backfilled. The blocks can be retrieved easily if a need for them is identified in the future.

5.3.4 TSA Reentry Study

Cells 1 and 6 of TSA-1 were opened in a TSA Reentry Study conducted in 1978 to determine if the stored TRU waste containers were undergoing significant deterioration since storage.[76] The waste in Cell 1 had been stored in late 1970 and early 1971 and was the earliest waste stored aboveground. The drums in this cell were stacked horizontally. The waste in Cell 6, however, was stored during 1973. Cell 6 was chosen since it was the first cell in which all the drums were stacked vertically, the method currently used at the RWMC.

All drums were found to be in good condition, but drums from Cell 1 generally appeared in better condition than those from Cell 6. (Both of these areas were filled without an ASWS.) The difference in the condition of the drums was attributed to (a) Cell 1 drums being stacked horizontally rather than vertically, allowing less flat surface to be exposed to the weather, and (b) drums in Cell 1 being painted with black bituminous-base paint instead of white alkalyd paint as those in Cell 6. The bituminous paint appeared more resistant to a moist environment.[76] The storage method was considered acceptable and responsive to requirements of 20-year interim storage, especially since storage now takes place under an air support weather shield.[76]

One-hundred-thirty-five DOT 17C drums retrieved from Cells 1 and 6 were subjected to ultrasonic testing during FY 1979 to provide additional data for evaluating container life in the TSA storage. The results of the testing showed the thickness of the drums to be within original tolerances. The data obtained from the testing of these retrieved drums indicate that they will meet and probably exceed the 20-year storage criteria. This study recommended continuance of the present storage practice and unchanged environmental conditions in the storage cells.[77]

Cell 5 of TSA-1 was opened June 1984 for inspection of the waste containers and development of SWEPP certification procedures. Findings will be documented upon completion of the project.

5.4 Changes in Waste Management Practices

Changes in waste management practices at the RWMC since 1970 are described in the following sections.

5.4.1 Waste Information Systems

The Waste Information Section operates six waste information systems for DOE. This section and the Waste Information Systems were transferred to the National Low Level Waste Management Programs Branch February 13, 1984.

5.4.2 Waste Storage Practices

Waste storage practices on TSA pads were changed in FY 1981 to delay by at least a year the time when TSA air-support weather shield (ASWS-2) is filled and must be moved. Metal boxes stacked two high and fiberglass-coated wooden boxes stacked three high comprise the perimeter to stabilize the waste stack under ASWS-2 (Figure 14). Within the perimeter, metal barrels are stacked in 4 x 4 x 6-barrel arrays to fill one section of the grid at a time. The purpose of filling one section at a time is to facilitate retrieval of a specific barrel or shipment if that becomes necessary. Since a section holds 96 barrels, and a shipment usually contains approximately 70 barrels, two sections, at most, would have to be opened to retrieve a particular barrel or shipment. Figure 18 illustrates the new grid pattern being used in ASWS-2 on TSA-2, and Figure 19 illustrates the new grid on TSA-R.

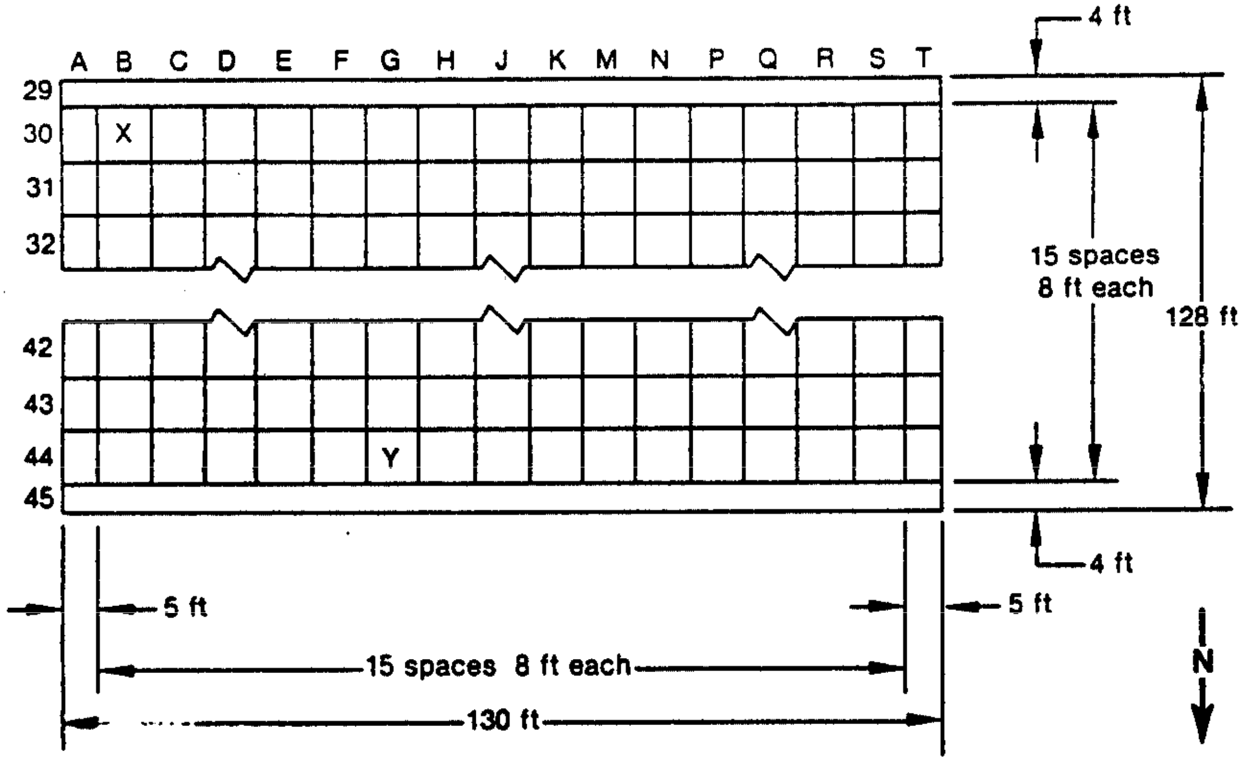
5.4.3 Space Utilization

A 1970 letter pointed out that the Burial Ground would be filled in a few years unless a plan for maximum utilization was developed and implemented.[80] The problem was examined in 1971, and a resulting space utilization plan proposed closer spacing of the trenches and using space between old trenches. It also pointed out the advantages to be gained through compaction.[81]

A life-expectancy study of the SDA began in 1979 and has been documented annually.[82,83,84,85,85a] The study predicts the useful lifetime of the SDA based on 10-year forecasts provided by waste generators, current waste-handling practices, and the known available space in the SDA. The study concluded that space could be fully used as early as 1996. The resulting changes in space utilization are addressed in the following subsections.

Table 5 summarizes the waste buried or stored at the RWMC from 1952 through December 1983.

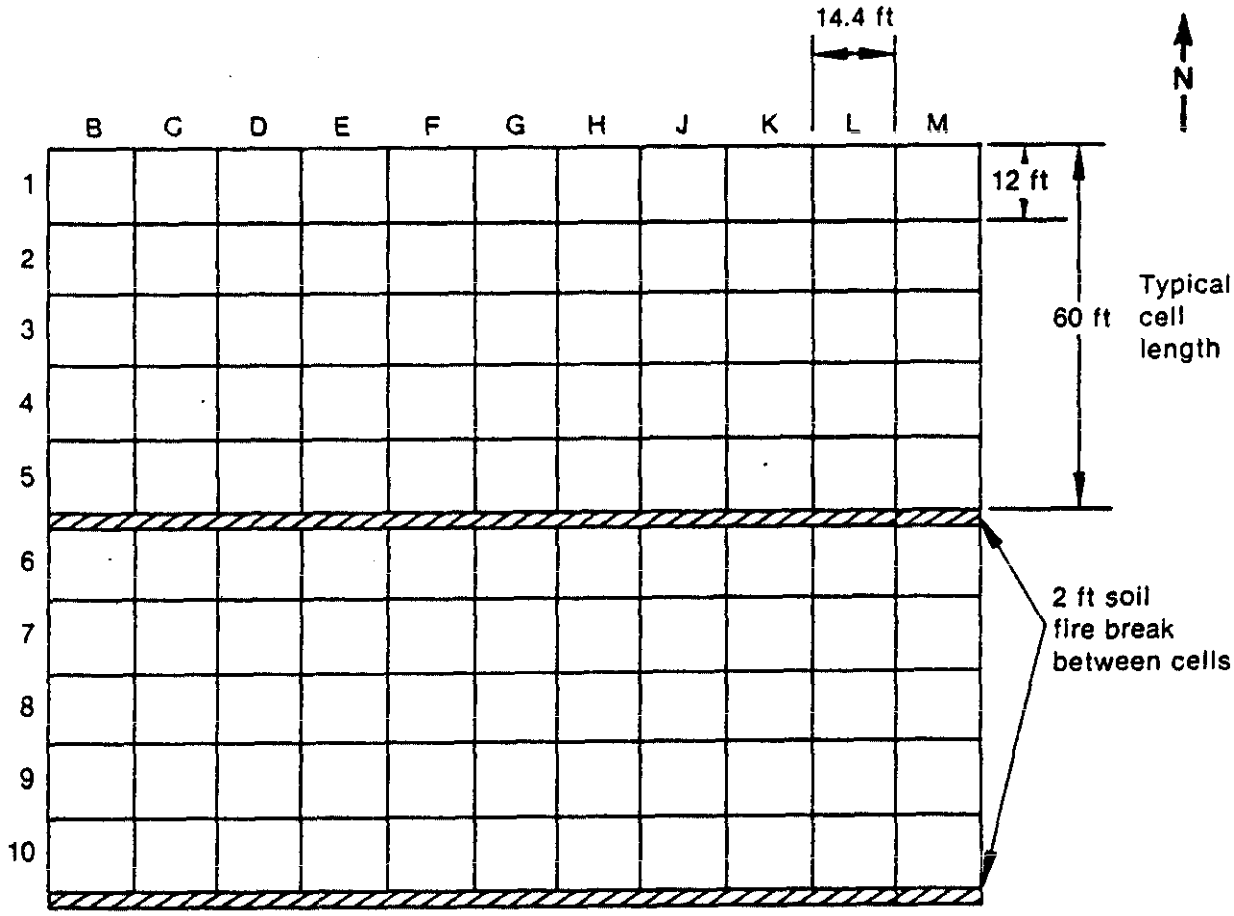
5.4 3.1 Compaction. Waste volume had always been a concern because of shipping and handling costs and because of the need to conserve space at the Burial Ground. By 1966 (and possibly as early as 1962), the gamma-emitting routine waste at the NRTS was compacted by dropping a heavy steel plate on it.



Notes:
1. All dimensions are approximate.
2. Grid sections are marked with 4-in.-wide stripes.
3. Grid designations are being painted along north edge of each section.
4. Numbers and letters are painted 12 in. high.
5. Numbers indicate the approximate number of rows of waste sections from the south end of TSA Pad 2.
6. Around the perimeter, metal boxes are stacked two high, and fiberglass-coated wooden boxes are stacked three high.
7. Metal barrels are stacked six high within the perimeter.
   One 8 x 8-ft section is filled (4 x 4 x 5-barrel array) before proceeding to the next section.
8. X is Section 30B. Y is Section 44 G.

INEL 4 0498

Figure 18. Storage grid system used in ASWS-2 on TSA Pad-2.



Notes:
1. All dimensions are approximate.
2. Grid sections are marked with 4-in.-wide stripes.
3. Grid designations are being painted along south edge of section.
4. Numbers and letters are painted 12 in. high.
5. The cell will be closed annually, with approximately 60 ft of stored waste between soil fire breaks. Cells will be closed and fire breaks emplaced when weather and conditions permit.

INEL 4 0495

Figure 19. Storage grid system used on TSA-R pad.